

WHAT IS CLAIMED IS:

1. A condition management callback system for use with a processor employing a hierarchical register consolidation structure, comprising:

a condition management structure containing groups of status indicators associated with said hierarchical register consolidation structure logically abstracted into a tree of hierarchical container objects and element objects, each of said container objects associated with at least one of said element objects and linked to a single parent object, each of said element objects representing at least one of said status indicators and linked to a single child object;

a callback abstraction subsystem configured to register a callback for one of said element objects and store logically abstracted data associated with said callback; and

an abstraction retrieval subsystem configured to employ said condition management structure to determine a condition of at least one of said status indicators by traversing said hierarchical register consolidation structure, initiate said callback based on said condition and pass said logically abstracted data if said one of said element objects representing said at least one of said status indicators has said callback registered.

2. The condition management callback system as recited in
2 Claim 1 wherein said callback abstraction subsystem is further
3 configured to register said callback for at least one of said
4 container objects.

3. The condition management callback system as recited in
2 Claim 2 wherein said abstraction retrieval subsystem is further
3 configure to initiate said callback based on said element objects
4 associated with said at least one of said container objects and
5 pass said logically abstracted data.

4. The condition management callback system as recited in
2 Claim 1 wherein said logically abstracted data is a text message.

5. The condition management callback system as recited in
2 Claim 1 wherein said hierarchical register consolidation structure
3 is a hierarchical interrupt register structure of said processor
4 and said status indicators are interrupt bits of registers within
5 said hierarchical register consolidation structure.

6. The condition management callback system as recited in
2 Claim 5 wherein said logically abstracted data contains information
3 related to a type of interrupt.

7. The condition management callback system as recited in
2 Claim 1 wherein said callback includes a function pointer, an
3 application data pointer and a callback state.

8. The condition management callback system as recited in
2 Claim 1 wherein said callback includes control information for
3 automatic enabling and disabling of said callback.

9. The condition management callback system as recited in
2 Claim 1 wherein said callback abstraction subsystem is further
3 configured to set an auto-disable flag associated with said
4 callback and said abstraction retrieval subsystem is further
5 configured to employ said auto-disable flag to cause said callback
6 to be disabled from being initiated again after a first initiation.

10. The condition management callback system as recited in
2 Claim 1 wherein said callback abstraction subsystem is further
3 configured to register multiple callbacks for said one of said
4 element objects and store logically abstracted data for each of
5 said callbacks.

11. A condition management callback method for use with a processor employing a hierarchical register consolidation structure, comprising:

abstracting groups of status indicators associated with said hierarchical register consolidation structure into a tree of hierarchical container objects and element objects to form a condition management structure, each of said container objects associated with at least one of said element objects and linked to a single parent object, each of said element objects representing at least one of said status indicators and linked to a single child object;

registering a callback for one of said element objects;

storing logically abstracted data associated with said callback;

employing said condition management structure to determine a condition of at least one of said status indicators by traversing said hierarchical register consolidation structure;

initiating said callback based on said condition; and

passing said logically abstracted data if said one of said element objects representing said at least one of said status indicators has said callback registered.

12. The condition management callback system as recited in
2 Claim 11 wherein said registering comprises registering said
3 callback for at least one of said container objects.

13. The condition management callback system as recited in
2 Claim 12 wherein said initiating comprises initiating said callback
3 based on said element objects associated with said at least one of
4 said container objects and pass said logically abstracted data.

14. The condition management callback system as recited in
2 Claim 11 wherein said logically abstracted data is a text message.

15. The condition management callback system as recited in
2 Claim 11 wherein said hierarchical register consolidation structure
3 is a hierarchical interrupt register structure of said processor
4 and said status indicators are interrupt bits of registers within
5 said hierarchical register consolidation structure.

16. The condition management callback system as recited in
2 Claim 15 wherein said logically abstracted data contains
3 information related to a type of interrupt.

17. The condition management callback system as recited in
2 Claim 11 wherein said callback includes a function pointer, an
3 application data pointer and a callback state.

18. The condition management callback system as recited in
2 Claim 11 wherein said callback includes control information for
3 automatic enabling and disabling of said callback.

19. The condition management callback system as recited in
2 Claim 11 wherein said abstracting comprises setting an auto-disable
3 flag associated with said callback, said method further comprising
4 employing said auto-disable flag to cause said callback to be
5 disabled from being initiated again after a first initiation.

20. The condition management callback system as recited in
2 Claim 11 wherein said registering comprises registering multiple
3 callbacks for said one of said element objects and store logically
4 abstracted data for each of said callbacks.